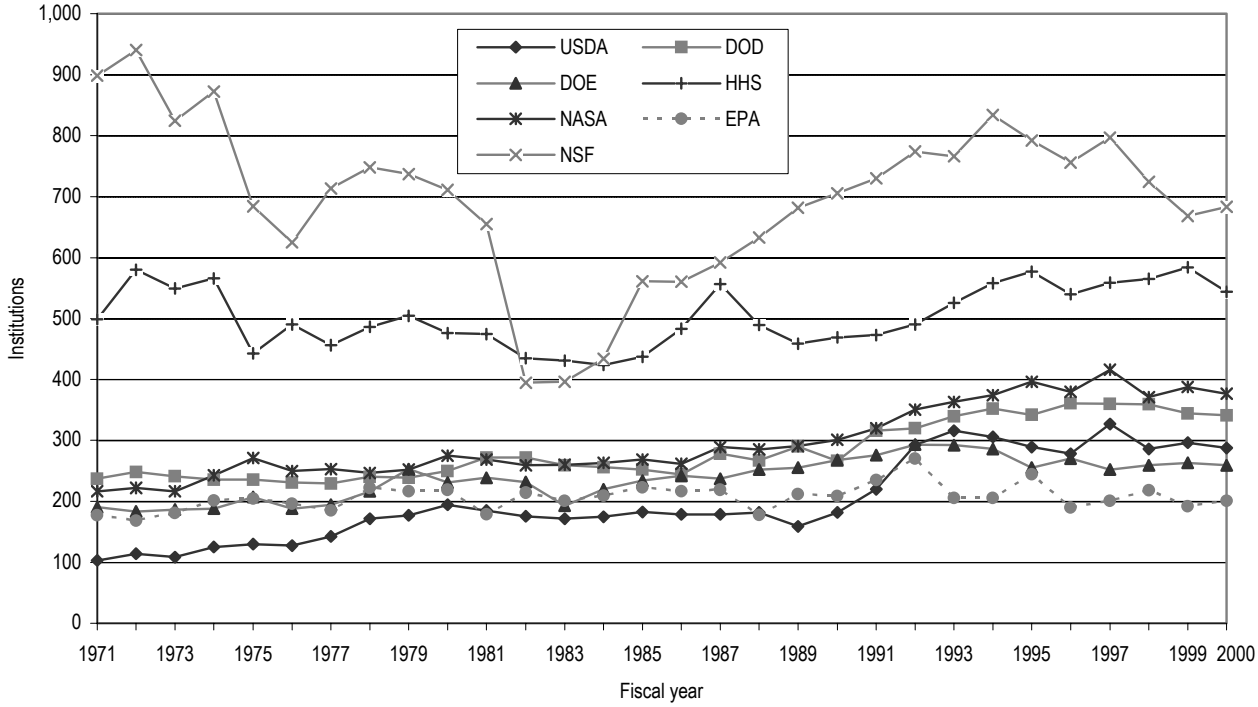
FEDERAL AGENCIES PROVIDING ACADEMIC S&E SUPPORT

Seven Federal agencies—HHS, NSF, the Department of Defense (DOD), the Department of Energy (DOE), EPA, the National Aeronautics and Space Administration (NASA), and the USDA—are the main sources of Federal academic S&E funds. (See appendix table 7.) These seven agencies provided between 92 percent and 96 percent of all Federal academic S&E funding during the FY 1971–2000 period. However, although three of these agencies—HHS, NSF, and DOD—provided the bulk of the funds during most of this period, two of them—NSF and HHS—supported the greatest number of institutions. Consequently, the discussion in this section focuses primarily on HHS and NSF.

Number of institutions receiving S&E support. Throughout almost the entire FY 1971–2000 period, NSF provided S&E support to the largest number of academic institutions; HHS supported the second largest number of institutions. (See figure 8 and appendix table 9.)[9] Between the early 1970s and the early 1980s, NSF had the greatest decline in number of institutions supported; the number supported by HHS also declined, but less dramatically. The number of NSF-supported institutions decreased from a peak of 940 in FY 1972 to a low of 395 in FY 1982, then increased to 834 by FY 1994, and then decreased once again, reaching 683 in FY 2000. HHS supported 580 institutions in FY 1972; the number decreased to 424 by FY 1984 and then began a generally upward trend, culminating in a high of 584 in FY 1999. Because NSF and HHS dominated Federal funding of academic S&E activity, the overall trend in the number

[9] Before 1980, HHS was called the Department of Health, Education, and Welfare and included what is now the Department of Education.

Figure 8. **Number of academic institutions receiving Federal S&E support, by agency: FY 1971–2000**



KEY: USDA = Department of Agriculture; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; EPA = Environmental Protection Agency; NSF = National Science Foundation.

NOTE: S&E support includes R&D support (both R&D and R&D plant) and "other S&E support" (facilities and equipment for S&E instruction; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities).

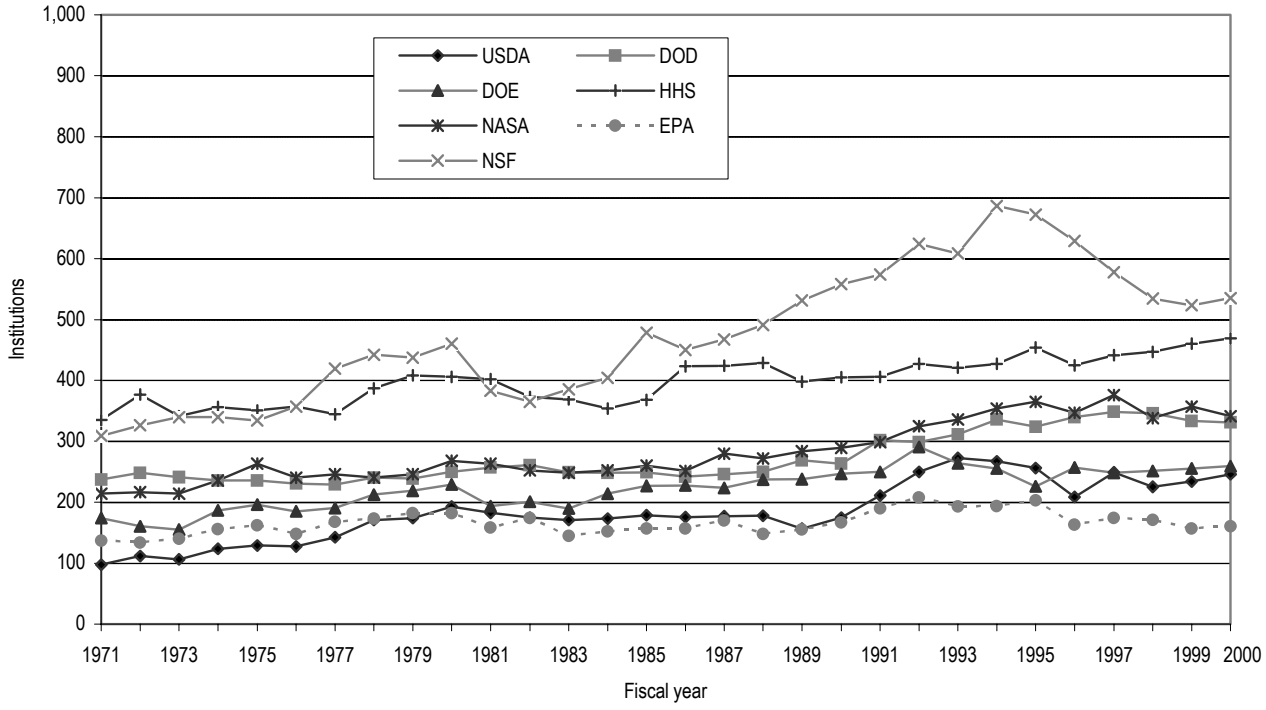
SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, as reported in WebCASPAR data system (available at <http://www.nsf.gov/sbe/srs/stats.htm>).

of funded institutions closely tracked the combined pattern of changes for these two agencies. The other five major funding agencies, however, exhibited a different pattern. For each of these agencies, the number of funded institutions fluctuated considerably, but the general trend was upward. The total number of institutions supported by each of the other agencies was much smaller than the number supported by NSF and HHS.

Number of institutions receiving R&D support. During the FY 1971–2000 period, especially through the early to mid-1990s, the number of academic institutions receiving R&D support generally increased for all of the major Federal funding agencies. As with total S&E support, NSF generally provided R&D support to the largest number of institutions since the mid-1970s, followed by HHS. (See figure 9 and appendix table 9.) In FY 1994, NSF supported 686 institutions (the largest number it supported during the FY 1971–2000 period), compared with 427 supported by HHS. This gap between NSF and HHS narrowed during the rest of the 1990s; in FY 2000, NSF supported 535 institutions, HHS 469. The number of institutions provided with R&D support peaked in FY 2000 for HHS; for the other six funding agencies, the number peaked some time during the 1990s and generally declined thereafter.

Number of institutions receiving "other S&E support." It was in this area of support that both NSF and HHS showed the greatest decline (in both relative and absolute terms) in the number of academic institutions funded between the early 1970s and early 1980s. NSF generally supported the largest number of institutions during the FY 1970–2000 period, except for several years in the early to mid-1980s when HHS supported a larger number. (See figure 10 and appendix table 9.) However, from the beginning of the 1970s to the early 1980s, the number of institutions receiving "other S&E support" from NSF declined dramatically, from about 900 to about 200; after FY 1983, the number began to increase, peaking at 563 in FY 1997, and then declined once again, reaching 457 in FY 2000. The decline at HHS between FY 1972 and FY 1984, from 475 to approximately 300 institutions, was not as dramatic; after FY 1987, the number fluctuated between 313 and 431 at HHS. Throughout the entire 30-year period, USDA, DOD, DOE, and EPA each provided fewer than 200 academic institutions with "other S&E support" in any

Figure 9. **Number of academic institutions receiving Federal R&D support, by agency: FY 1971–2000**



KEY: USDA = Department of Agriculture; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; EPA = Environmental Protection Agency; NSF = National Science Foundation.

NOTE: R&D support includes support for both R&D and R&D plant.

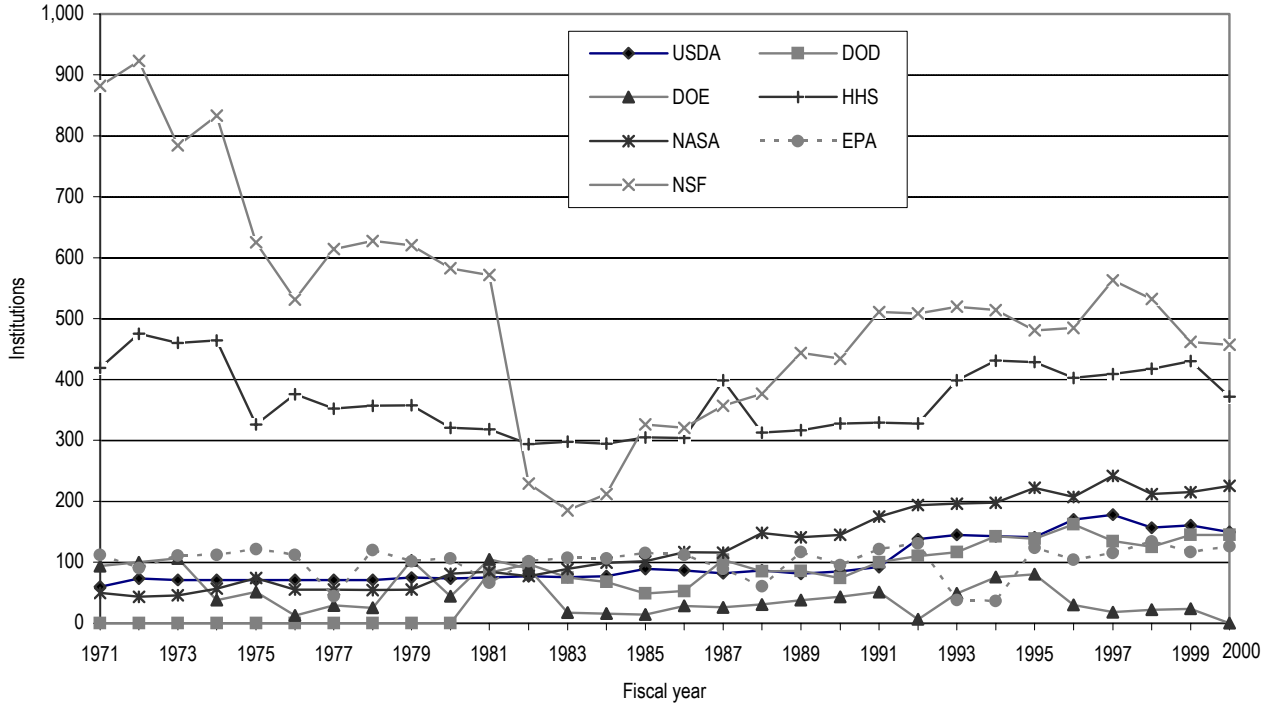
SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, as reported in WebCASPAR data system (available at <http://www.nsf.gov/sbe/srs/stats.htm>).

given year; for NASA, the maximum number supported in any year was 242. For USDA, DOD, and NASA, the number supported generally increased over the 30-year period; for DOE, it generally decreased and none were reported supported in FY 2000.

Percentage of supported institutions receiving R&D funding. The increasing emphasis on Federal R&D support between the early 1970s and early 1980s, characterized by the increasing percentage of academic institutions receiving R&D support, appears to have been limited to NSF and HHS. In 1972, NSF provided R&D funding to about one-third of the 940 academic institutions it supported with S&E funds. (See appendix table 2.) In FY 1982, more than 90 percent of the institutions supported by NSF received R&D funding. In FY 1971, HHS provided R&D funding to 67 percent of the 499 institutions it supported. In FY 1982, 86 percent of the institutions supported by HHS received R&D funding. For the other major funding agencies, the percentage of supported institutions receiving R&D funding either decreased or showed no clear pattern during this period. For both NSF and HHS, the percentage of supported institutions that received R&D funding peaked during the 1980s. At NSF, although the percentage did not decline continuously thereafter, it was considerably lower than its peak by the end of the 30-year period. At HHS, several times in the 1990s, the percentage approached its peak.

Total institutions supported during FYs 1971–2000 and number of years institutions received support. Between FY 1971 and FY 2000, almost 2,000 academic institutions received some form of S&E support from NSF and about 1,200 received support from HHS. However, most of these institutions did not receive support continually throughout the period. (See figure 11.) For both NSF and HHS, most of the institutions supported received funding for less than half of the period (depending on the type of support being considered), and about half received funding for five years or less of the period. (See figure 12.) Only 23 percent of the institutions supported by NSF during FY 1971–2000 and 30 percent of those supported by HHS received funds from those agencies in more than 20 of the 30 years in the period.

Figure 10. **Number of academic institutions receiving Federal "other S&E support," by agency: FY 1971–2000**

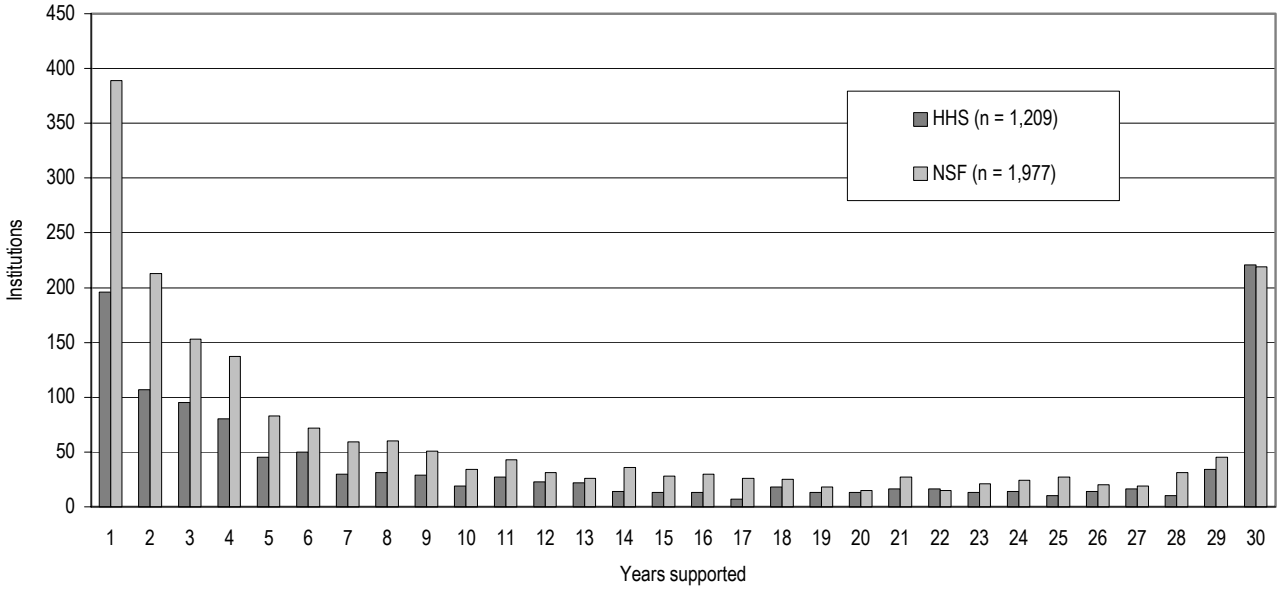


KEY: USDA = Department of Agriculture; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; EPA = Environmental Protection Agency; NSF = National Science Foundation.

NOTE: Other S&E includes support for facilities and equipment for S&E instruction; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, as reported in WebCASPAR data system (available at <http://www.nsf.gov/sbe/srs/stats.htm>).

Figure 11. **Distribution of the academic institutions receiving HHS and NSF S&E support in FY 1971 to 2000, by number of years supported during the period**



KEY: HHS = Department of Health and Human Services; NSF = National Science Foundation.

NOTE: S&E support includes R&D support (both R&D and R&D plant) and "other S&E support" (facilities and equipment for S&E instruction; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities).

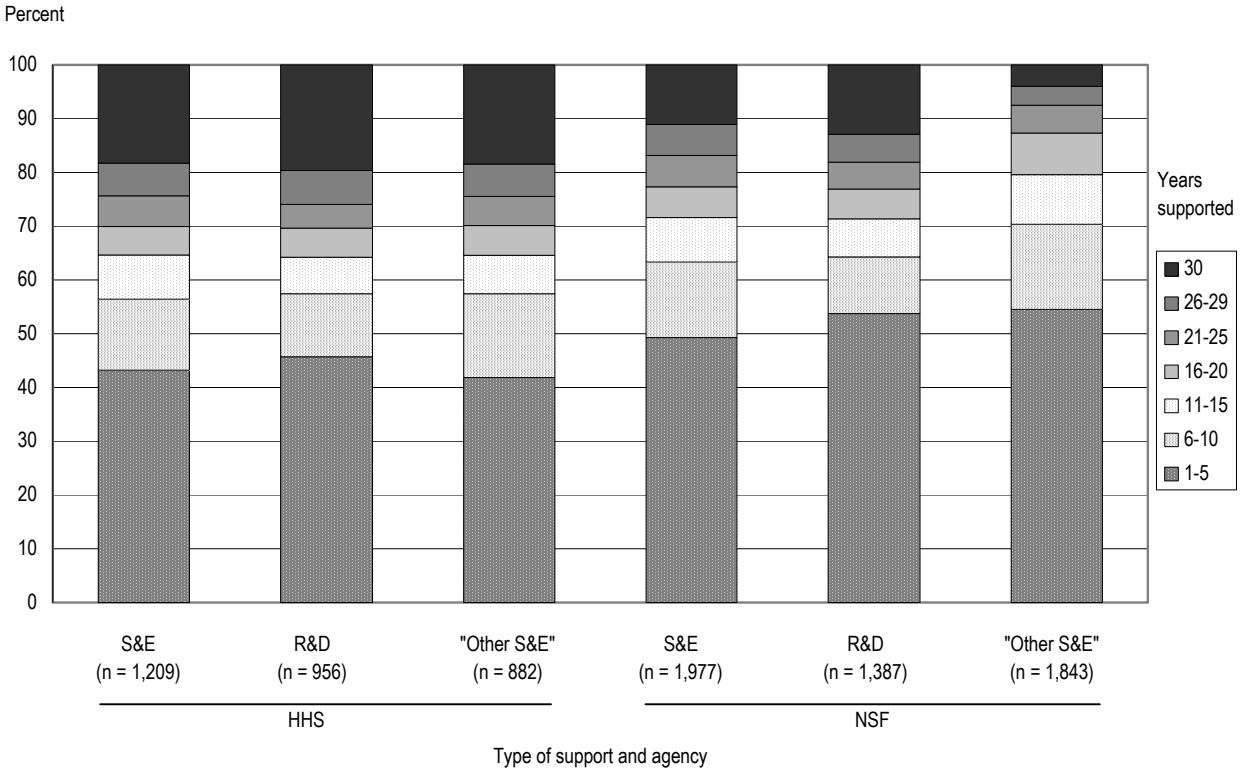
SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, as reported in WebCASPAR data system (available at <http://www.nsf.gov/sbe/srs/stats.htm>).

The other five major funding agencies supported considerably fewer institutions during this period, between approximately 650 and 750. (See appendix table 9.)

Shifts in funding for S&E support. The absolute constant dollar decline in "other S&E support" that occurred between the early 1970s and early 1980s occurred primarily at NSF and HHS. (See appendix table 7.) With the exception of USDA, the other funding agencies provided little support for these activities during the 1970s; DOD reported no funding in this area until FY 1981. During the FY 1971–2000 period, USDA provided between $400 million and $500 million in other S&E support in any given year. The large constant dollar decline in other S&E support for fellowships, traineeships, and training grants occurred mainly at HHS, where funding in this category decreased from a little more than $1 billion in FY 1971 to $231 million in FY 1982. (See appendix table 10.) At NSF, support in this category fell from $141 million in FY 1971 to $24 million in FY 1981. HHS and NSF provided almost all of the funding in this category. In the early 1970s, NSF funding also declined substantially in the general support for S&E category, decreasing from $190 million in FY 1971 to no funding at all in FY 1975. NSF support in this category ranged from $34 million to $57 million between FY 1976 and FY 1981 and then declined to $5 million in FY 1982; after FY 1982, NSF never provided more than $15 million of funding in this category in any given year.

As noted previously, the balance between R&D support and other S&E support changed during the FY 1971–2000 period. The nature of these changes, however, differed across the major Federal funding agencies. At NSF, the share of funds destined for R&D increased between FY 1971 and FY 1983 from 58 percent to 96 percent and then declined, reaching 84 percent in FY 1999. (See appendix table 6.) At HHS, the share of S&E funds directed to R&D increased throughout almost the entire period, from 66 percent in FY 1971 to 91 percent in FY 1983 and then to 93 percent in FY 1992 and in most years thereafter. At both DOD and NASA, the R&D portion of S&E support generally declined over the period, from close to 100 percent to around 90 percent. At DOE, the pattern was more erratic, with the R&D share of S&E funds fluctuating between 94 percent and

Figure 12. **Distribution of academic institutions receiving HHS and NSF S&E support in FY 1971 to 2000, by number of years supported during the period, by type of support**



KEY: HHS = Department of Health and Human Services; NSF = National Science Foundation.

NOTE: S&E support includes R&D support (both R&D and R&D plant) and "other S&E support" (facilities and equipment for S&E instruction; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities).

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100 percent. EPA generally increased the R&D portion of its support during the 1970s and 1980s, from 63 percent in FY 1971 to 97 percent in FY 1988; the R&D share of support at EPA hovered around the 90 percent level after FY 1988. At USDA, the R&D share of S&E funds was lower than at any other major funding agency, although this share generally rose over the years, from 35 percent in FY 1971 to 52 percent in FY 2000.

R&D support to Carnegie groups. The share of Federal R&D funds going to the different Carnegie groups of institutions differed among the major funding agencies. As indicated previously, between 94 percent and 97 percent of all Federal R&D funding during the FY 1971–2000 period went to research, doctorate-granting, and medical institutions. For HHS and DOE, the share of R&D funding going to these institutions tended to be larger than the average for all the major funding agencies; for the other major agencies, the share tended to be smaller. (See appendix table 4.) For every agency except DOD, the research, doctorate-granting, and medical institutions received a slightly smaller share of R&D funds by FY 2000 than they did at the beginning of the 30-year period. However, HHS, DOE, and DOD still directed between 94 and 97 percent of their R&D funds to these institutions in FY 2000 compared with 90 percent or less for NSF, NASA, USDA, and EPA.

"Other S&E support" to Carnegie groups. The share of "other S&E support" going to the different Carnegie classes of institutions also differed among the major funding agencies. As mentioned previously, the overall share of this support going to research, doctorate-granting, and medical institutions declined

10 percentage points between FY 1971 and FY 2000, from 91 percent to 81 percent. There was considerable movement in the shares provided by each agency to these institutions over the course of the 30-year period. For HHS, USDA, and DOD, the share generally was larger than the average for all agencies; for NSF and NASA, the share generally was smaller; and for DOE and EPA, the share did not follow a consistent pattern. For most agencies, the share of "other S&E support" going to research, doctorate-granting, and medical institutions was smaller in FY 2000 than at the beginning of the 30-year period. (See appendix table 4.)